IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.: SPIEGEL-8

In re PATENT Application of:	)
PASQUALE SPIEGEL	)
	) **Examiner: Charles S. Bushy**
Appl. No.: 10/597,999	)
Filed: June 14, 2007	)
	) **Confirmation No.: 8951**
For: METHOD AND DEVICE FOR THE GASSING OF WATER	) **Group Art Unit: 1776**
	)

AMENDMENT ACCOMPANYING THE FILING OF A RCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATION OF EFS-WEB TRANSMISSION

I hereby certify that this paper is being EFS-Web transmitted to the U.S. Patent and Trademark Office, Alexandria VA 22313-1450, on **February 9, 2012.**
Date

Ursula B. Day
(Name of Registered Representative)

(Signature) Feb. 9, 2012 (Date of Signature)

S I R:

Preliminary to the first Official Action in the above-entitled application, please amend the application as follows.

The Commissioner is hereby also authorized to charge any fees which may be required during the pendency of this application, including any patent application processing fees under 37 C.F.R. 1.17, and any filing fees under 37 C.F.R. 1.16, including presentation of extra claims, or credit any overpayment to Deposit Account No: 06-0502.

Please amend the above-entitled application as follows:

AMENDMENTS TO THE CLAIMS WITH MARKINGS TO SHOW CHANGES MADE, AND LISTING OF ALL CLAIMS WITH PROPER IDENTIFIERS

1. (Withdrawn) A method for increasing the adsorption of gas into water which is gassed at least in a gassing chamber, characterized in that the gas/water mixture, after leaving the gassing chamber, is guided through at least one gassing device located downstream of the gassing chamber, in which the gas/water mixture is being thoroughly mixed.

2. (Withdrawn) The method according to claim 1, characterized in that a carbonator chamber (48) and an inline carbonator (26) are utilized for the gassing with CO_2.

3. (Withdrawn) The method according to claim 1, characterized in that the gas/water mixture is guided across granulate inside the inline carbonator.

4. (Withdrawn) The method according to claim 3, characterized in that the granulate is filled into a hollow body surrounding the inline carbonator in the form of flowable bulk material.

5. (Withdrawn) The method according to claim 1, characterized in that an additional amount of gas is introduced into the gas/water mixture upon leaving the gassing chamber (48) and before entry into the inline carbonator (26).

6. (Withdrawn) The method according to claim 2, characterized in that in the inline carbonator (26) a pressure is maintained suitable for drawing a finely beaded gas/water mixture from a tap.

7. (Withdrawn) The method according to claim 6, characterized in that the gas/water mixture undergoes cooling prior to entry into the inline carbonator (26).

8. (Withdrawn) The method according to claim 2 characterized in that the liquid impregnated in the inline carbonator (26) is tapped from certain tapping points (32).

9. (Withdrawn) The method according to claim 2 characterized in that the carbonator chamber (48) and the inline carbonator are utilized for industrial filling of refreshment beverages.

10. (Withdrawn) The method according to claim 9, characterized in that the inline carbonator (26) is integrated into a cooler.

11. (Withdrawn) The method according to claim 2, characterized in that the carbonator chamber (48) has at least one location for inputting liquid into the carbonator chamber (48).

12. (Withdrawn) The method according to claim 1, characterized in that there is at least one input opening at the inline carbonator (26) for inputting liquid into the inline carbonator.

13. (Withdrawn) The method according to claim 2, characterized in that inputting the liquid and the gas into the inline carbonator (26) is carried out in mutual dependence on the pressure of each the gas and the liquid.

14. (Withdrawn) The method according to claim 1, characterized in that a tapping system including a gassing chamber can be retrofitted with an inline carbonator (26).

15. (Withdrawn) The method according to claim 14, characterized in that carbonation in the inline carbonator takes place only upon tapping of arbonized liquids.

16. (Withdrawn) The method according to claim 4, characterized in that the hollow body of the inline carbonator (26) comprises three interconnected layers.

17. (Withdrawn) The method according to claim 16, characterized in that the innermost layer of the hollow body of the inline carbonator (26) is from plastic and covered by a middle layer from aluminum which is provided with an outer layer of plastic.

18. (Withdrawn) The method according to claim 2, characterized in that through integration of an inline carbonator (26), formation of foam is suppressed when tapping soft drinks.

19. (Withdrawn) The method according to claim 1, characterized in that prior to introducing carbonation in the carbonator chamber (48), the pressure of the liquid entering the carbonator chamber (48) is kept constant by means of a pressure elevator pump.

20. (Withdrawn) The method according to claim 19, characterized in that the carbonator chamber (48) and the recirculation carbonator (73) are combined into a post-mix system.

21. (Withdrawn) The method according to claim 19, characterized in that in one recirculation carbonator (73) two inline carbonators (26) are mounted parallel in a circular line.

22. (Withdrawn) The method according to claim 1 ~~to 19~~, characterized in that a post-mix system for refreshment beverages is provided with an inline carbonator (26) in an output line (51) of a shock carbonator.

23. (Withdrawn) The method according to claim 21, characterized in that two inline carbonators (26) are mounted parallel to each other in an output line (51) of a shock carbonator.

24. (Withdrawn) The method according to claim 23, characterized in that in a shock carbonator (80) the gas/water mixture under pressure form the carbonator chamber (48) is flowing through the inline carbonator (26) received within the carbonator chamber (56) directly following the cooling system.

25. (Withdrawn) The method according to claim 24, characterized in that the gas/water mixture under pressure from the carbonator chamber (48) is passing through two parallel mounted inline carbonators (26) received inside the water basin (56).

26. (Withdrawn) The method according to claim 25, characterized in that each of the at least two inline carbonators (26) through which the gas/water mixture flows are provided with a separate line for the gas/ water mixture under pressure from the carbonator chamber (48).

27. (Withdrawn) The method according to claim 20, characterized in that in a recirculation carbonator (73), the inline carbonator (26) downstream of the carbonator chamber (48) is integrated into the circular line within the water basin (56).

28. (Withdrawn) The method according to claim 27, characterized in that in a recirculation carbonator (73) the gas/water mixture under pressure from the

carbonator chamber (48) is passing through two inline carbonators (26) mounted parallel to each other within the water basin (56).

29.-31.(Cancelled)

32. (Withdrawn) The device according 29, characterized in that the carbonator chamber (48) is disposed within a recirculation carbonator (73).

33.-34.(Cancelled)

35. (Withdrawn) The device according to claim 29, characterized in that the inline carbonators (26) interior of a housing which houses the carbonator chamber (48) and the inline carbonator (26).

36. (Cancelled)

37. (Withdrawn) The device according to claim 29, characterized in that in a recirculation carbonator (3) the inline carbonator (26) is disposed in a branch of a circulation line, which is under elevated pressure generated by a displacement pump (53) as compared to the circulation line.

38. (Withdrawn) The device according to claim 33, characterized in that in a shock carbonator (80) the inline carbonator (26) is provided with an exit line (29) of the carbonator chamber (48) connected to tapping points.

39. (Withdrawn) The device according to claim 38, characterized in that the inline carbonator (26) comprises a granulate filled hollow body whose opposite openings are each closed by means of a flange (63) and provided with a bore (66) which each extends in the direction of an inner space that is surrounded by a hollow body and wherein at a side facing away from the inner space is

surrounded with cylindrical shaped slide-on surfaces (64, 65), each of the flange (66) facing inner slide-on surface (63) has a larger diameter as compared to the outer slide-on surface facing away from the flange (63).

40. (Withdrawn) A method for carrying out an additional post carbonation or impregnation by means of one or more hollow body inline impregnator or carbonator systems filled with granulate (1) (2) (7) (13) and to provide tapping valves or (faucets) for the so post-impregnated liquids which may be cooled, and for producing and tapping refreshment beverages via at least one hollow body inline impregnation system filled preferably with granulate (10 92) (7) (13) and via the hollow body Inline carbonators (1) (2) (7) (13) supply impregnated liquids to the tap or tapping faucets.

41. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that already impregnated liquids can be post-impregnated or post-carbonated through the hollow body inline impregnation system (1) (2) (7) (13) without supplying additional gas or liquid.

42. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that several hollow body inline impregnation systems can be in operation simultaneously.

43. (Withdrawn) The method according to claim 42 for a hollow body inline impregnation systems (1) (2) (7) (13) characterized by using also refrigerated liquids.

44. (Withdrawn) The method according to claim 43 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that one or more hollow body inline impregnator systems supply refrigerated or non-refrigerated

impregnated liquids to at least one tap for producing post-carbonated or impregnated liquids.

45. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that impregnation is carried out independently by means of the hollow body inline impregnation system (1) (2) (7) (13) under addition of refrigerated and non-refrigerated gases and liquids.

46. (Withdrawn) The method according to claim 45 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the system can be of different construction and assembly.

47. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that one or more hollow body inline impregnation systems (1) (2) (7) (13) can be used for industrial filling of refreshment beverages.

48. (Withdrawn) The method according to claim 47 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the impregnated or carbonated liquids can be drawn from the tap with fine beads.

49. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that hollow body inline impregnation system (1) (2) (7) (13) can be utilized integrated directly into a refrigeration machine of any type.

50. (Withdrawn) The method according to claim 49 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid supply is provided.

51. (Withdrawn) The method according to claim 50 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid and gas supply is provided for the hollow body inline impregnation system (1) (2) (7) (13).

52. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the existing impregnation or carbonator system can be retrofitted or added on to with at least one hollow body inline impregnation system (1) (2) (7) (13).

53. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that carbonating or impregnating takes place preferably only when tapping from the tap or taps and thus carbonation or impregnation takes pace in a continuous operation.

54. (Withdrawn) The method according to claim 40 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that at least one liquid supply line connector and at least one liquid exit line for the refrigerated or non-refrigerated liquids is provided, wherein the hollow body inline impregnator preferably is made with three–layers, with an inner layer of plastic, preferably polyethylene, an intermediate layer from aluminum and the third layer preferably from plastic or other suitable materials.

55. (Withdrawn) The method according to claim 54 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that the formation of foam is suppressed when tapping the soft drinks from the tap or taps.

56. (Withdrawn) The method according to claim 55 for a hollow body inline impregnation system (1) (2) (7) (13) characterized in that prior to impregnation

or carbonation, the liquid pressure is preferably kept constant by using at least one pressure elevating pump.

57. (Currently amended) An apparatus for producing gasified fluid comprising:

- at least one carbonator vessel as a ~~first~~ gasifier for producing a mixture of gas and fluid ;
- an inline carbonator as a ~~second gasifier~~ post-impregnator arranged downstream of the ~~first~~ gasifier, wherein the inline carbonator is filled with a granulate providing an increased surface area such that the mixture of gas and fluid flowing from the ~~first~~ gasifier into the inline carbonator becomes intensified with gas that has been taken up in the inline carbonator so the gasified fluid is suitable for tapping a finely bubbled mixture with an increased number of bubbles, wherein pressure means are provided relative to the gas and the fluid in both the ~~first and the second~~ carbonator and the post-impregnator to maintain a mutual pressure of the gas and the fluid in ~~each~~ both the carbonator and the post-impregnator; wherein the ~~second carbonator~~ post-impregnator is a flow-through impregnator ~~is~~ provided with an input and an output ~~line and a tap~~, and wherein the post-impregnator is constructed to operate in one and the other direction, the input then being the output.

58. (Currently amended) The apparatus of claim ~~66~~ 57, wherein, the ~~first~~ gasifier is arranged as a carbonator vessel which is arranged within a circuit carbonator.

59. (Currently amended) The apparatus of claim ~~66~~ 57, wherein the carbonator vessel is arranged within a batch carbonator.

60. (Currently amended) The apparatus of claim ~~66~~ 57, wherein the ~~second gasifier~~ post-impregnator is arranged outside a housing, said housing constructed for accommodating the carbonator and a cooling system for the carbonator.

61. (Currently amended) The apparatus of claim ~~66~~ 57, wherein a cooling system is provided between the carbonator vessel and the inline carbonator for flow-through of the pressurized mixture of fluid and gas.

62. (Currently amended) The apparatus of claim ~~66~~ 57, wherein the inline carbonator is arranged in a circuit carbonator in a branch of the circuit line which is under pressure which is generated by a displacement pump and is increased over the remaining circuit line.

63. (Currently amended) The apparatus of claim ~~66~~ 57, wherein the inline carbonator is a hollow body enclosing an interior space filled with granulate and with opposing ends, each sealed by a flange through which a bore extends in the direction towards the interior space, wherein each end of the hollow body is encompassed on a side facing away from he interior space by tubular slide-on surfaces, of which an inner slide-on surface facing the flange has a larger cross section that an outer slide-on surface facing away from the flange.

REMARKS

This Amendment is submitted preliminary to the issuance of an Office Action in the present application and in response to the Official Action of August 9, 2011.

Claims 1-28, 32, 35, 37-63 are pending in the application. Claims 1-28, 32, 35, and 37-56 are withdrawn from consideration. At least claim 57 was examined.

Claims 58-63 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 57 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Malmström of record taken together with either Singleterry or Bosko and Spiegel also of record.

All withdrawn claims have been listed and all claims listed in numerical order.

REJECTION OF CLAIM 58-63 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 58 to 63 have been amended to indicate their proper dependency.

REJECTION OF CLAIM 57 UNDER 35 U.S.C. §103(A) AS BEING UNPATENTABLE OVER MALMSTRÖM TAKEN TOGETHER WITH EITHER SINGLETERRY OR BOSKO AND FURTHER IN VIEW OF SPIEGEL.

The rejection under 35 U.S.C. 103(a) is respectfully traversed.

Amended claim 57 is directed to a apparatus maintained under pressure for producing finely-bubbled carbonation of the liquid/gas mixture by additionally leading the liquid.gas mixture through a granulate filled gasifier. Applicant amended the claim so the in-line carbonator is defined as a post-impregnator. The amendment is supported by the specification in **[0047]**.

Malmström does not teach an in-line carbonator according to the present invention. Malmström teaches that gas is guided into a container S and accumulates

liquid from sprayed in water mixed with gas but is not filled. The mixture is being led into the secondary carbonator identified as a cooler or discharging cylinder D where it can take up additional gas. Container D is also not entirely filled such that the gas is not under pressure. A valve C when opened delivers gas to container D, it equalizes the pressure while in normal operation, C is closed.

The Malmström differs from the claimed invention in significant ways. In particular, the carbonation system according to the present invention includes separate pressure means to maintain a steady pressure in the liquid within the carbonators. In contrast, the Malmström system does not have separate pressure means and therefore must maintain the system by opening and closing the C valve.

Furthermore, the system according to the invention includes the presence of a granulate in the carbonator which allows that the CO_2 gas can get absorbed more intensely within the liquid which is especially important for sugary liquids. Amended claim 57 also recites that the direction of the stream can vary in that the post-impregnator is constructed to operate in one and the other direction, the input then being the output.

The Examiner has cited Singelterry or Bosko for teaching a carbonation apparatus having upstream and downstream carbonation devices. The aim in Singleterry is to provide a carbonation system that is tankless. Water is guided through a venturi nozzle and while moving through the nozzle, the water is mixed with CO_2 to form a water gas mixture. As shown in Fig. 3 of Singleterry the static mixer 40 does not carbonate by itself but includes vanes that create turbulent flow of the carbonated fluid.

Singleterrry and the claimed invention differ in a significant way in that while the claimed system clearly outlines a carbonation vessel under pressurized condition, Singleterrry, aiming at a tankless system, does not. Indeed, Singleterrry distinguishes it self from the prior art of those systems utilizing a carbonation tank system (col. 3, lines 9-13). Furthermore, the gas/water mixture should not be pressurized in Singleterrry as the efficiently of the venture system is extremely flow critical.

The Examiner has cited Singleterrry for the proposition of the existence of upstream and downstream carbonators stating: *Each of the secondary references provide an upstream and downstream carbonation device within a continuous flow carbonation means such that the high efficiency carbonation may be realized within a continuous process which is able to produce a greater volume of uniformly carbonated product per unit over time over a batch tank type carbonation system.* However, Singleterrry does not provide a batch tank system.

Thus a combination of Malmström and Singleterrry as postulated by the Examiner does not render the claimed invention obvious because Singleterrry does not teach upstream and downstream carbonators that are tank-dependent. Thus, the person skilled in the art would not look to the Singleterrry system. The claimed system works with a carbonation tank system, whereby the liquid is pressurized in the inline carbonator suitable finely beaded gas/water mixture, Singleterrry does not.

A combination of Malmström and Bosko will likewise not lead to the now claimed apparatus. Bosko lacks a post-impregnator. The Bosko carbonator works differently from the claimed invention. Because there is on one carbonator, the carbonator in Bosko is of a much modified variety. The Bosko device lacks a continuous gas liquid stream which flows under a beginning pressure and downstream is being tapped while the pressure in the system is maintained. The Bosko device does not have an even pressure throughout the system, in particular because it is possible to tap uncarbonated water from the Bosko apparatus. Bosko teaches a method for saturating aliquid with CO_2 by molecular gas transfer. This has nothing to do with post-mixing gassed liquid. The person skilled in the art would not look to Bosko's teaching for a cheaper design of employing a post-impregnator.

The Spiegel reference the Examiner cites does not teach that a finely-bubbled liquid/gas mixture is produced which contains an increased amount of bubbles. As such, the apparatus produces a mixture which greatly foams when tapped and looses it carbonation very quickly. Tapping has to be conducted slowly so no overflow due to foaming occurs. To alleviate this problem, still water had to added at high volume

tapping times, which erodes the quality of the carbonated drinks. The currently claimed device allows large tapping capacity without unwanted foaming.

Based on the foregoing, applicant contends that the combination of Malmström with either Singleterrry or Bosko does not rationally lead a person skilled in the art to the claimed invention. While Spiegel may teach the granulate, such granulate would have no place in a system the Examiner proposes as a combination Malmström Singleterrry or Malmström Bosko.

Withdrawal of the rejection of claim 57 under 35 U.S.C. §103(a) is thus respectfully requested.

CONCLUSION

Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, he will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

None of the references discloses a device for mixing a gas/mixture in the presence of carbonators with maintained pressure level.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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